

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: UNITED BIOMEDICAL INC., ET AL.
- (ii) TITLE OF INVENTION: ARTIFICIAL T HELPER CELL
EPITOPES AS IMMUNE STIMULATORS FOR SYNTHETIC
EPTIDE IMMUNOGENS
- (iii) NUMBER OF SEQUENCES: 151
- (iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Morgan & Finnegan, L.L.P.
(B) STREET: 345 Park Avenue
(C) CITY: New York
(D) STATE: NY
(E) COUNTRY: USA
(F) ZIP: 10154-0054
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC Windows
(D) SOFTWARE: Word 97
- (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: TO BE ASSIGNED
(B) FILING DATE: 21-JUNE-1999
(C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: 09/100,414
(B) FILING DATE: 20-JUNE-1998
- (viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Maria H. Lin
(B) REGISTRATION NUMBER: 29,323
(C) REFERENCE/DOCKET NUMBER: 1151-4158PC1
- (ix) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: 212-758-4800
(B) TELEFAX: 212-751-6849

RECEIVED
TECH CENTER 1600/2900
02 OCT 15 AM 10:45

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

```
Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu
1              5              10
Glu Gly Val
              15
```

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

```
Asp Leu Ser Asp Leu Lys Gly Leu Leu Leu His Lys
1              5              10
Leu Asp Gly Leu
              15
```

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (C) TOPOLOGY: LINEAR

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

```
Glu Ile Ser Glu Ile Arg Gly Ile Ile Ile His Arg
1              5              10
Ile Glu Gly Ile
              15
```

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 amino acids
- (B) TYPE: amino acid
- (C) TOPOLOGY: LINEAR

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Asp Val Ser Asp Val Lys Gly Val Val Val His Lys
1 5 10
Val Asp Gly Val
15

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 amino acids
- (B) TYPE: amino acid
- (C) TOPOLOGY: LINEAR

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Asp Phe Ser Asp Phe Lys Gly Phe Phe Phe His Lys
1 5 10
Phe Asp Gly Phe
15

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
1 5 10
Glu Gly Ile
15

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Met
1				5					10		
Glu	Thr	Met									
		15									

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys
1				5					10	
Leu	Glu	Gly	Val							
		15								

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Ile
1				5					10		
Glu	Thr	Ile									
		15									

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

```
Met Ser Glu Ile Lys Gly Val Ile Val His Lys Leu
 1               5               10
Glu Gly Met
           15
```

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

```
Leu Thr Glu Met Arg Thr Val Ile Val Thr Arg Met
 1               5               10
Glu Thr Val
           15
```

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

```
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
 1               5               10
Glu Thr Ile
           15
```

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Met	Ser	Glu	Met	Lys	Gly	Val	Ile	Val	His	Lys	Met
1				5					10		
Glu	Gly	Met									
		15									

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Leu	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Leu
1				5					10		
Glu	Thr	Val									
		15									

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5					10		
Lys	Ile	Glu	Gly	Ile	Leu	Phe					
		15									

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

```
Ile Ser Met Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Met Glu Thr Met Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

```
Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
1              5              10
Lys Leu Glu Gly Val Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

```
Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Ile Glu Thr Ile Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

```
Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
1              5              10
Lys Leu Glu Gly Met Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

```
Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Ile Glu Thr Ile Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

```
Ile Ser Met Ser Glu Met Lys Gly Val Ile Val His
1              5              10
Lys Met Glu Gly Met Leu Phe
              15
```


(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

```
Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Leu Glu Thr Val Leu Phe
              15
```

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

```
Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln
1              5              10
Ser Leu Asp
              15
```

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

```
Lys Lys Lys Phe Phe Leu Leu Thr Arg Ile Leu Thr
1              5              10
Ile Pro Gln Ser Leu Asp
              15
```

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln
1 5 10
Ser Leu

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Lys Lys Lys Leu Phe Leu Leu Thr Lys Leu Leu Thr
1 5 10
Leu Pro Gln Ser Leu Asp
15

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Arg Arg Arg Ile Lys Ile Ile Thr Arg Ile Ile Thr
1 5 10
Ile Pro Leu Ser Ile Arg
15

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

```
Lys Lys Lys Val Arg Val Val Thr Lys Val Val Thr
1              5              10
Val Pro Ile Ser Val Asp
              15
```

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

```
Lys Lys Lys Phe Phe Phe Phe Thr Lys Phe Phe Thr
1              5              10
Phe Pro Val Ser Phe Asp
              15
```

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

```
Lys Lys Lys Leu Phe Leu Leu Thr Lys Leu Leu Thr
1              5              10
Leu Pro Phe Ser Leu Asp
              15
```

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

```
Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
1               5               10
Ile Ile Thr Thr Ile Asp
               15
```

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

```
Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
1               5               10
Ile Ile Thr Thr Ile
               15
```

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

```
Lys Lys Lys Met Met Thr Met Thr Arg Met Ile Thr
1               5               10
Met Ile Thr Thr Ile Asp
               15
```

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Phe	Ile	Thr	Met	Asp	Thr	Lys	Phe	Leu	Leu	Ala	Ser
1				5				10			
Thr	His	Ile	Leu								
			15								

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Lys	Lys	Lys	Phe	Ile	Thr	Met	Asp	Thr	Lys	Phe	Leu
1				5				10			
Leu	Ala	Ser	Thr	His	Ile	Leu					
			15								

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 27 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

```
Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu
1           5           10
Glu Gly Val Gly Gly Glu His Trp Ser Tyr Gly Leu
          15           20
Arg Pro Gly
25
```

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

```
Asp Leu Ser Asp Leu Lys Gly Leu Leu Leu His Lys
1           5           10
Leu Asp Gly Leu Gly Gly Glu His Trp Ser Tyr Gly
          15           20
Leu Arg Pro Gly
25
```

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

```
Glu Ile Ser Glu Ile Arg Gly Ile Ile Ile His Arg
1           5           10
Ile Glu Gly Ile Gly Gly Glu His Trp Ser Tyr Gly
          15           20
Leu Arg Pro Gly
25
```

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp	Val	Ser	Asp	Val	Lys	Gly	Val	Val	Val	His	Lys
1				5					10		
Val	Asp	Gly	Val	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly
		15					20				
Leu	Arg	Pro	Gly								
25											

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Asp	Phe	Ser	Asp	Phe	Lys	Gly	Phe	Phe	Phe	His	Lys
1				5					10		
Phe	Asp	Gly	Phe	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly
		15					20				
Leu	Arg	Pro	Gly								
25											

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Ile
1				5					10		
Glu	Gly	Ile	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Met
1				5					10		
Glu	Thr	Met	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Leu	Ser	Glu	Ile	Lys	Gly	val	Ile	Val	His	Lys	Leu
1				5					10		
Glu	Gly	Val	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 27 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

```
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
1           5           10
Glu Thr Ile Gly Gly Glu His Trp Ser Tyr Gly Leu
          15           20
Arg Pro Gly
25
```

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 45 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

```
Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala
1           5           10
Thr Tyr Gln Phe Gly Gly Ile Ser Glu Ile Lys Gly
          15           20
Val Ile Val His Lys Ile Glu Gly Ile Gly Gly Glu
25           30           35
His Trp Ser Tyr Gly Leu Arg Pro Gly
          40           45
```

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 45 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala	
1				5					10			
Thr	Tyr	Gln	Phe	Gly	Gly	Ile	Thr	Glu	Ile	Arg	Thr	
		15				20						
Val	Ile	Val	Thr	Arg	Ile	Glu	Thr	Ile	Gly	Gly	Glu	
25				30					35			
His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro	Gly				
			40					45				

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Met	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Leu	
1				5					10			
Glu	Gly	Met	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	
		15				20						
Arg	Pro	Gly										
25												

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Leu	Thr	Glu	Met	Arg	Thr	Val	Ile	Val	Thr	Arg	Met
1				5					10		
Glu	Thr	Val	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Ile
1				5					10		
Glu	Thr	Ile	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Met	Ser	Glu	Met	Lys	Gly	Val	Ile	Val	His	Lys	Met
1				5					10		
Glu	Gly	Met	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 27 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Leu	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Leu
1				5				10			
Glu	Thr	Val	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 45 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5				10			
Thr	Tyr	Gln	Phe	Gly	Gly	Leu	Thr	Glu	Ile	Arg	Thr
		15				20					
Val	Ile	Val	Thr	Arg	Leu	Glu	Thr	Val	Gly	Gly	Glu
25				30				35			
His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro	Gly			
		40					45				

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

```
Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His
1           5           10
Lys Ile Glu Gly Ile Leu Phe Gly Gly Glu His Trp
          15           20
Ser Tyr Gly Leu Arg Pro Gly
25           30
```

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

```
Ile Ser Met Thr Glu Ile Arg Thr Val Ile Val Thr
1           5           10
Arg Met Glu Thr Met Leu Phe Gly Gly Glu His Trp
          15           20
Ser Tyr Gly Leu Arg Pro Gly
25           30
```

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

```
Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
1           5           10
Lys Leu Glu Gly Val Leu Phe Gly Gly Glu His Trp
          15           20
Ser Tyr Gly Leu Arg Pro Gly
25           30
```

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Gly	Gly	Glu	His	Trp
		15					20				
Ser	Tyr	Gly	Leu	Arg	Pro	Gly					
25					30						

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 49 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5				10			
Thr	Tyr	Gln	Phe	Gly	Gly	Ile	Ser	Ile	Ser	Glu	Ile
		15					20				
Lys	Gly	Val	Ile	Val	His	Lys	Ile	Glu	Gly	Ile	Leu
25					30					35	
Phe	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro
			40					45			
Gly											

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 49 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5					10		
Thr	Tyr	Gln	Phe	Gly	Gly	Ile	Ser	Ile	Thr	Glu	Ile
		15					20				
Arg	Thr	Val	Ile	Val	Thr	Arg	Ile	Glu	Thr	Ile	Leu
25					30					35	
Phe	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro
			40					45			
Gly											

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Ile	Ser	Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5					10		
Lys	Leu	Glu	Gly	Met	Leu	Phe	Gly	Gly	Glu	His	Trp
		15					20				
Ser	Tyr	Gly	Leu	Arg	Pro	Gly					
25					30						

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala	
1				5					10			
Thr	Tyr	Gln	Phe	Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	
		15					20					
Val	Ile	Val	His	Lys	Ile	Glu	Gly	Ile	Leu	Phe	Gly	
25				30						35		
Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro	Gly		
			40					45				

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	
1				5					10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Gly	Gly	Glu	His	Trp	
		15					20					
Ser	Tyr	Gly	Leu	Arg	Pro	Gly						
25				30								

(2) INFORMATION FOR SEQ ID NO:62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 49 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5					10		
Thr	Tyr	Gln	Phe	Gly	Gly	Ile	Ser	Ile	Thr	Glu	Ile
		15					20				
Arg	Thr	Val	Ile	Val	Thr	Arg	Ile	Glu	Thr	Ile	Leu
25					30					35	
Phe	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro
			40					45			
Gly											

(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 47 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5					10		
Thr	Tyr	Gln	Phe	Ile	Ser	Met	Ser	Glu	Met	Lys	Gly
		15					20				
Val	Ile	Val	His	Lys	Met	Glu	Gly	Met	Leu	Phe	Gly
25					30					35	
Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro	Gly	
			40					45			

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ile	Ser	Leu	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Leu	Glu	Thr	Val	Leu	Phe	Gly	Gly	Glu	His	Trp
		15					20				
Ser	Tyr	Gly	Leu	Arg	Pro	Gly					
25				30							

(2) INFORMATION FOR SEQ ID NO:65

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65

Phe	Phe	Leu	Leu	Thr	Arg	Ile	Leu	Thr	Ile	Pro	Gln
1				5				10			
Ser	Leu	Asp	Gly	Gly	Glu	His	Trp	Ser	Tyr	Gly	Leu
		15					20				
Arg	Pro	Gly									
25											

(2) INFORMATION FOR SEQ ID NO:66

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66

Lys	Lys	Lys	Leu	Phe	Leu	Leu	Thr	Lys	Leu	Leu	Thr
1				5				10			
Leu	Pro	Gln	Ser	Leu	Asp	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25				30							

(2) INFORMATION FOR SEQ ID NO:67

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67

Arg	Arg	Arg	Ile	Lys	Ile	Ile	Thr	Arg	Ile	Ile	Thr
1				5					10		
Ile	Pro	Leu	Ser	Ile	Arg	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25					30						

(2) INFORMATION FOR SEQ ID NO:68

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68

Lys	Lys	Lys	Val	Arg	Val	Val	Thr	Lys	Val	Val	Thr
1				5					10		
Val	Pro	Ile	Ser	Val	Asp	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25					30						

(2) INFORMATION FOR SEQ ID NO:69

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69

Lys	Lys	Lys	Phe	Phe	Phe	Phe	Thr	Lys	Phe	Phe	Thr
1				5					10		
Phe	Pro	Val	Ser	Phe	Asp	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25					30						

(2) INFORMATION FOR SEQ ID NO:70

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70

Lys	Lys	Lys	Leu	Phe	Leu	Leu	Thr	Lys	Leu	Leu	Thr
1				5					10		
Leu	Pro	Phe	Ser	Leu	Asp	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25					30						

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Lys	Lys	Lys	Ile	Ile	Thr	Ile	Thr	Arg	Ile	Ile	Thr
1				5					10		
Ile	Ile	Thr	Thr	Ile	Asp	Gly	Gly	Glu	His	Trp	Ser
		15					20				
Tyr	Gly	Leu	Arg	Pro	Gly						
25					30						

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

```
Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
1           5           10
Ile Ile Thr Thr Ile Gly Gly Glu His Trp Ser Tyr
          15           20
Gly Leu Arg Pro Gly
25
```

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 30 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

```
Lys Lys Lys Met Met Thr Met Thr Arg Met Ile Thr
1           5           10
Met Ile Thr Thr Ile Asp Gly Gly Glu His Trp Ser
          15           20
Tyr Gly Leu Arg Pro Gly
25           30
```

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 28 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Phe Ile Thr Met Asp Thr Lys Phe Leu Leu Ala Ser
1 5 10
Thr His Ile Leu Gly Gly Glu His Trp Ser Tyr Gly
15 20
Leu Arg Pro Gly
25

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala
1 5 10
Thr Tyr Gln Phe Gly Gly Phe Ile Thr Met Asp Thr
15 20
Lys Phe Leu Leu Ala Ser Thr His Ile Leu Gly Gly
25 30 35
Glu His Trp Ser Tyr Gly Leu Arg Pro Gly
40 45

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Lys Lys Lys Phe Ile Thr Met Asp Thr Lys Phe Leu
1 5 10
Leu Ala Ser Thr His Ile Leu Gly Gly Glu His Trp
15 20
Ser Tyr Gly Leu Arg Pro Gly
25 30

(2) INFORMATION FOR SEQ ID NO:77:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 10 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Glu	His	Trp	Ser	Tyr	Gly	Leu	Arg	Pro	Gly
1				5					10

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5					10		
Thr	Tyr	Gln	Phe								
				15							

(2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 6 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Pro	Pro	Xaa	Pro	Xaa	Pro
1			5		

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 14 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Ala Gly Cys Lys Asn Phe Phe Trp Lys Thr Phe Thr
 1 5 10
Ser Cys

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
 1 5 10
Glu Gly Ile Gly Gly Ala Gly Cys Lys Asn Phe Phe
 15 20
Trp Lys Thr Phe Thr Ser Cys
 25 30

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Met
1				5					10		
Glu	Thr	Met	Gly	Gly	Ala	Gly	Cys	Lys	Asn	Phe	Phe
		15					20				
Trp	Lys	Thr	Phe	Thr	Ser	Cys					
25				30							

(2) INFORMATION FOR SEQ ID NO:83:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Leu
1				5					10		
Glu	Gly	Val	Gly	Gly	Ala	Gly	Cys	Lys	Asn	Phe	Phe
		15					20				
Trp	Lys	Thr	Phe	Thr	Ser	Cys					
25				30							

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Ala	Gly	Cys	Lys	Asn	Phe	Phe	Trp	Lys	Thr	Phe	Thr
1				5					10		
Ser	Cys	Gly	Gly	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile
		15					20				
Val	His	Lys	Ile	Glu	Gly	Ile					
25				30							

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ala	Gly	Cys	Lys	Asn	Phe	Phe	Trp	Lys	Thr	Phe	Thr	
1				5					10			
Ser	Cys	Gly	Gly	Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	
		15					20					
Val	Thr	Arg	Met	Gly	Thr	Met						
25					30							

(2) INFORMATION FOR SEQ ID NO:86:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Ala	Gly	Cys	Lys	Asn	Phe	Phe	Trp	Lys	Thr	Phe	Thr	
1				5					10			
Ser	Cys	Gly	Gly	Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	
		15					20					
Val	His	Lys	Leu	Glu	Gly	Val						
25					30							

(2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 34 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

```
Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
1                               5               10
Ile Ile Thr Thr Ile Asp Gly Gly Ala Gly Cys Lys
                15                   20
Asn Phe Phe Trp Lys Thr Phe Thr Ser Cys
25                   30
```

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

```
Cys Asn Gln Gly Ser Phe Leu Thr Lys Gly Pro Ser
1                               5               10
Lys Leu Asn Asp Arg Ala Asp Ser Arg Arg Ser Leu
                15                   20
Trp Asp Gln Gly Asn Cys
25                   30
```

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 47 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

```
Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
1                               5               10
Glu Gly Ile Gly Gly Cys Asn Gln Gly Ser Phe Leu
                15                   20
Thr Lys Gly Pro Ser Lys Leu Asn Asp Arg Ala Asp
25                   30                   35
Ser Arg Arg Ser Leu Trp Asp Gln Gly Asn Cys
                40                   45
```

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Met	
1				5				10				
Glu	Thr	Met	Gly	Gly	Cys	Asn	Gln	Gly	Ser	Phe	Leu	
		15				20						
Thr	Lys	Gly	Pro	Ser	Lys	Leu	Asn	Asp	Arg	Ala	Asp	
25				30				35				
Ser	Arg	Arg	Ser	Leu	Trp	Asp	Gln	Gly	Asn	Cys		
			40					45				

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Leu	
1				5				10				
Glu	Gly	Val	Gly	Gly	Cys	Asn	Gln	Gly	Ser	Phe	Leu	
		15				20						
Thr	Lys	Gly	Pro	Ser	Lys	Leu	Asn	Asp	Arg	Ala	Asp	
25				30				35				
Ser	Arg	Arg	Ser	Leu	Trp	Asp	Gln	Gly	Asn	Cys		
			40					45				

(2) INFORMATION FOR SEQ ID NO:92:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Cys	Gly	Glu	Thr	Tyr	Gln	Ser	Arg	Val	Thr	His	Pro
1				5					10		
His	Leu	Pro	Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys
		15					20				
Cys											
25											

(2) INFORMATION FOR SEQ ID NO:93:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5					10		
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Gly	Gly	Cys	Gly	Glu
		15					20				
Thr	Tyr	Gln	Ser	Arg	Val	Thr	His	Pro	His	Leu	Pro
25				30						35	
Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys	Cys		
			40					45			

(2) INFORMATION FOR SEQ ID NO:94:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Gly	Gly	Cys	Gly	Glu
		15					20				
Thr	Tyr	Gln	Ser	Arg	Val	Thr	His	Pro	His	Leu	Pro
25				30				35			
Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys	Cys		
		40					45				

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Ile
1				5				10			
Glu	Gly	Ile	Gly	Gly	Cys	Gly	Glu	Thr	Tyr	Gln	Ser
		15					20				
Arg	Val	Thr	His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met
25				30				35			
Arg	Ser	Thr	Thr	Lys	Cys						
				40							

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Met	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg	Met
1				5					10		
Glu	Thr	Met	Gly	Gly	Cys	Gly	Glu	Thr	Tyr	Gln	Ser
		15					20				
Arg	Val	Thr	His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met
25				30						35	
Arg	Ser	Thr	Thr	Lys	Cys						
				40							

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys	Leu
1				5					10		
Glu	Gly	Val	Gly	Gly	Cys	Gly	Glu	Thr	Tyr	Gln	Ser
		15					20				
Arg	Val	Thr	His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met
25				30						35	
Arg	Ser	Thr	Thr	Lys	Cys						
				40							

(2) INFORMATION FOR SEQ ID NO:98:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Lys	Lys	Lys	Ile	Ile	Thr	Ile	Thr	Arg	Ile	Ile	Thr	
1				5					10			
Ile	Ile	Thr	Thr	Ile	Asp	Gly	Gly	Cys	Gly	Glu	Thr	
		15				20						
Tyr	Gln	Ser	Arg	Val	Thr	His	Pro	His	Leu	Pro	Arg	
25				30						35		
Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys	Cys				
			40					45				

(2) INFORMATION FOR SEQ ID NO:99:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 63 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala	
1				5					10			
Thr	Tyr	Gln	Phe	Gly	Gly	Lys	Lys	Lys	Ile	Ile	Thr	
		15				20						
Ile	Thr	Arg	Ile	Ile	Thr	Ile	Ile	Thr	Thr	Ile	Asp	
25				30						35		
Gly	Gly	Cys	Gly	Glu	Thr	Tyr	Gln	Ser	Arg	Val	Thr	
			40					45				
His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met	Arg	Ser	Thr	
	50					55					60	
Thr	Lys	Cys										

(2) INFORMATION FOR SEQ ID NO:100:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Arg	His	Lys	Gln	Lys	Ile	Val	Ala	Pro	Val	Lys	Gln	
1				5					10			
Thr	Leu	Pro	Pro	Ser	Val	Pro	Asn	Leu	Arg	Gly	Asp	
		15					20					
Leu	Gln	Val	Leu	Ala	Gln	Lys	Val	Ala	Arg	Thr	Pro	
25					30					35		
Cys	Gly											

(2) INFORMATION FOR SEQ ID NO:101:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 56 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Lys	Lys	Lys	Ile	Ile	Thr	Ile	Thr	Arg	Ile	Ile	Thr	
1				5					10			
Ile	Ile	Thr	Thr	Ile	Asp	Gly	Gly	Cys	Lys	Tyr	Gly	
		15					20					
Glu	Asn	Ala	Val	Thr	Asn	Val	Arg	Gly	Asp	Leu	Gln	
25					30					35		
Val	Leu	Ala	Gln	Lys	Ala	Ala	Arg	Cys	Leu	Pro	Thr	
			40					45				
Ser	Phe	Asn	Tyr	Gly	Ala	Ile	Lys					
	50					55						

(2) INFORMATION FOR SEQ ID NO:102

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 72 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102

Thr	Ala	Lys	Ser	Lys	Lys	Phe	Pro	Ser	Tyr	Thr	Ala
1				5					10		
Thr	Tyr	Gln	Phe	Gly	Gly	Lys	Lys	Lys	Ile	Ile	Thr
		15					20				
Ile	Thr	Arg	Ile	Ile	Thr	Ile	Ile	Thr	Thr	Ile	Asp
25				30						35	
Gly	Gly	Cys	Thr	Tyr	Gly	Thr	Gln	Pro	Ser	Arg	Arg
			40					45			
Gly	Asp	Met	Ala	Ala	Leu	Ala	Gln	Arg	Leu	Ser	Arg
	50					55					60
Cys	Leu	Pro	Thr	Ser	Phe	Asn	Tyr	Gly	Ala	Val	Lys
				65						70	

(2) INFORMATION FOR SEQ ID NO:103

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103

Asn Ala Asn Pro
1

(2) INFORMATION FOR SEQ ID NO:104

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5				10			
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Lys	Asn	Ala	Asn	Pro
		15				20					
Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro
25				30				35			

(2) INFORMATION FOR SEQ ID NO:105

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Lys	Asn	Ala	Asn	Pro
		15				20					
Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro
25				30				35			

(2) INFORMATION FOR SEQ ID NO:106

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106

Arg	Asp	Gly	Phe	Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly
1				5				10			
Phe	Pro	Glu	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser
		15				20					
Leu	Ser										
25											

(2) INFORMATION FOR SEQ ID NO:107

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107

Phe	Gly	Phe	Pro	Glu	His	Leu	Leu	Val	Asp	Phe	Leu
1				5					10		
Gln	Ser	Leu	Ser								
			15								

(2) INFORMATION FOR SEQ ID NO:108

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 16 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108

Phe	Gly	Phe	Pro	Lys	His	Leu	Leu	Val	Asp	Phe	Leu
1				5					10		
Gln	Ser	Leu	Ser								
			15								

(2) INFORMATION FOR SEQ ID NO:109

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 26 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109

Leu	Asp	Gly	Cys	Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly
1				5					10		
Phe	Pro	Lys	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser
		15					20				
Leu	Ser										
25											

(2) INFORMATION FOR SEQ ID NO:110

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5					10		
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Lys	Arg	Asp	Gly	Phe
		15					20				
Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly	Phe	Pro	Glu	His
25				30						35	
Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser		
		40						45			

(2) INFORMATION FOR SEQ ID NO:111

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Lys	Arg	Asp	Gly	Phe
		15					20				
Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly	Phe	Pro	Glu	His
25				30						35	
Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser		
			40					45			

(2) INFORMATION FOR SEQ ID NO:112

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5				10			
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Lys	Phe	Gly	Phe	Pro
		15					20				
Glu	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser
25				30						35	

(2) INFORMATION FOR SEQ ID NO:113

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Lys	Phe	Gly	Phe	Pro
		15				20					
Glu	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser
25				30						35	

(2) INFORMATION FOR SEQ ID NO:114

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 35 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114

Lys	Lys	Lys	Ile	Ile	Thr	Ile	Thr	Arg	Ile	Ile	Thr
1				5				10			
Ile	Ile	Thr	Thr	Ile	Asp	Lys	Phe	Gly	Phe	Pro	Glu
		15				20					
His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser	
25				30						35	

(2) INFORMATION FOR SEQ ID NO:115

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 36 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115

Ile	Ser	Leu	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Leu	Glu	Thr	Val	Leu	Phe	Lys	Phe	Gly	Phe	Pro
		15				20					
Glu	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser
25				30						35	

(2) INFORMATION FOR SEQ ID NO:116

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 36 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5				10			
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Lys	Phe	Gly	Phe	Pro
		15				20					
Lys	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser
25				30						35	

(2) INFORMATION FOR SEQ ID NO:117

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 36 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Lys	Phe	Gly	Phe	Pro
		15				20					
Lys	His	Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser
25				30						35	

(2) INFORMATION FOR SEQ ID NO:118

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 46 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5					10		
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Lys	Leu	Asp	Gly	Cys
		15					20				
Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly	Phe	Pro	Lys	His
25				30						35	
Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser		
			40					45			

(2) INFORMATION FOR SEQ ID NO:119

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 46 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5					10		
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Lys	Leu	Asp	Gly	Cys
		15					20				
Leu	Leu	Leu	Gln	Met	Asp	Phe	Gly	Phe	Pro	Lys	His
25				30						35	
Leu	Leu	Val	Asp	Phe	Leu	Gln	Ser	Leu	Ser		
			40					45			

(2) INFORMATION FOR SEQ ID NO:120:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 35 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

```
Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His
1           5           10
Lys Ile Glu Gly Ile Leu Phe Pro Pro Xaa Pro Xaa
          15           20
Pro Glu His Trp Ser Tyr Gly Leu Arg Pro Gly
25           30           35
```

(2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 35 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

```
Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
1           5           10
Arg Ile Glu Thr Ile Leu Phe Pro Pro Xaa Pro Xaa
          15           20
Pro Glu His Trp Ser Tyr Gly Leu Arg Pro Gly
25           30           35
```

(2) INFORMATION FOR SEQ ID NO:122:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

```
Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr
1           5           10
Ile Ile Thr Thr Ile Asp Pro Pro Xaa Pro Xaa Pro
          15           20
Glu His Trp Ser Tyr Gly Leu Arg Pro Gly
25           30
```

(2) INFORMATION FOR SEQ ID NO:123:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ile	Ser	Leu	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Leu	Glu	Thr	Val	Leu	Phe					
				15							

(2) INFORMATION FOR SEQ ID NO:124:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe					
				15							

(2) INFORMATION FOR SEQ ID NO:125:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Glu	Ser	Val	Glu	Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn
1				5					10		
Asn	Thr	Arg	Lys	Ser	Ile	Arg	Ile	Gly	Pro	Gly	Gln
		15					20				
Ala	Phe	Tyr	Ala	Thr	Gly	Asp					
25					30						

(2) INFORMATION FOR SEQ ID NO:126:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 20
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5				10			
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Xaa	Glu	Ser	Val	Glu
		15					20				
Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn	Asn	Thr	Arg	Lys
25					30					35	
Ser	Ile	Arg	Ile	Gly	Pro	Gly	Gln	Ala	Phe	Tyr	Ala
			40					45			
Thr	Gly	Asp									
		50									

(2) INFORMATION FOR SEQ ID NO:127:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified site

(B) LOCATION: 20

(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

```
Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Ile Glu Thr Ile Leu Phe Xaa Glu Ser Val Glu
          15              20
Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys
25              30              35
Ser Ile Arg Ile Gly Pro Gly Gln Ala Phe Tyr Ala
          40              45
Thr Gly Asp
          50
```

(2) INFORMATION FOR SEQ ID NO:128:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 51 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified site

(B) LOCATION: 20

(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

```
Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr
1              5              10
Arg Leu Glu Thr Val Leu Phe Xaa Glu Ser Val Glu
          15              20
Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys
25              30              35
Ser Ile Arg Ile Gly Pro Gly Gln Ala Phe Tyr Ala
          40              45
Thr Gly Asp
          50
```

(2) INFORMATION FOR SEQ ID NO:129:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 20
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	
1				5				10				
Arg	Ile	Glu	Thr	Val	Ile	Phe	Xaa	Glu	Ser	Val	Glu	
		15				20						
Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn	Asn	Thr	Arg	Lys	
25				30				35				
Ser	Ile	Arg	Ile	Gly	Pro	Gly	Gln	Ala	Phe	Tyr	Ala	
		40				45						
Thr	Gly	Asp										
	50											

(2) INFORMATION FOR SEQ ID NO:130:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Lys	Ser	Ser	Gly	Lys	Leu	Ile	Ser	Leu
1				5				

(2) INFORMATION FOR SEQ ID NO:131:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Cys Asn Gly Arg Leu Tyr Cys Gly Pro
1 5

(2) INFORMATION FOR SEQ ID NO:132:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:

Cys Gly Thr Lys Leu Val Cys Phe Ala Ala
1 5 10

(2) INFORMATION FOR SEQ ID NO:133:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:

Lys Arg Ile Val Ile Gly Pro Gln Thr
1 5

(2) INFORMATION FOR SEQ ID NO:134:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Cys Ala Gly Gly Leu Thr Cys Ser Val
1 5

(2) INFORMATION FOR SEQ ID NO:135:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:135:

Cys Ser Gly Arg Leu Tyr Cys His Glu Ser Trp
1 5 10

(2) INFORMATION FOR SEQ ID NO:136:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 10
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:136:

Lys Ser Ser Gly Lys Leu Ile Ser Leu Xaa Ile Ser
1 5 10
Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
15 20
Glu Gly Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:137:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 10
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:137:

Lys Ser Ser Gly Lys Leu Ile Ser Leu Xaa Ile Ser
1 5 10
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
15 20
Glu Thr Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:138:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 10
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:138:

Cys Asn Gly Arg Leu Tyr Cys Gly Pro Xaa Ile Ser
1 5 10
Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
15 20
Glu Gly Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:139:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
(B) LOCATION: 10
(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:139:

```

Cys Asn Gly Arg Leu Tyr Cys Gly Pro Xaa Ile Ser
1          5          10
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
          15          20
Glu Thr Ile Leu Phe
25

```

(2) INFORMATION FOR SEQ ID NO:140:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
(B) LOCATION: 11
(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:140:

Cys	Gly	Thr	Lys	Leu	Val	Cys	Phe	Ala	Ala	Xaa	Ile
1				5				10			
Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Lys
		15				20					
Ile	Glu	Gly	Ile	Leu	Phe						
25				30							

(2) INFORMATION FOR SEQ ID NO:141:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 11
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:141:

Cys	Gly	Thr	Lys	Leu	Val	Cys	Phe	Ala	Ala	Xaa	Ile
1				5				10			
Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr	Arg
		15				20					
Ile	Glu	Thr	Ile	Leu	Phe						
25				30							

(2) INFORMATION FOR SEQ ID NO:142:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 10
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:142:

Lys Arg Ile Val Ile Gly Pro Gln Thr Xaa Ile Ser
1 5 10
Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
15 20
Glu Gly Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:143:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
(B) LOCATION: 10
(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:143:

Lys Arg Ile Val Ile Gly Pro Gln Thr Xaa Ile Ser
1 5 10
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
15 20
Glu Thr Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:144:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
(B) LOCATION: 10
(C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:144:

Cys Ala Gly Gly Leu Thr Cys Ser Val Xaa Ile Ser
1 5 10
Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
15 20
Glu Gly Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:145:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 10
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:145:

Cys Ala Gly Gly Leu Thr Cys Ser Val Xaa Ile Ser
1 5 10
Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
15 20
Glu Thr Ile Leu Phe
25

(2) INFORMATION FOR SEQ ID NO:146:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 12
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:146:

Cys	Ser	Gly	Arg	Leu	Tyr	Cys	His	Glu	Ser	Trp	Xaa
1				5					10		
Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
		15					20				
Lys	Ile	Glu	Gly	Ile	Leu	Phe					
25					30						

(2) INFORMATION FOR SEQ ID NO:147:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 12
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:147:

Cys	Ser	Gly	Arg	Leu	Tyr	Cys	His	Glu	Ser	Trp	Xaa
1				5					10		
Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
		15					20				
Arg	Ile	Glu	Gly	Ile	Leu	Phe					
25					30						

(2) INFORMATION FOR SEQ ID NO:148:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 52 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:148:

Ile	Ser	Ile	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His
1				5				10			
Lys	Ile	Glu	Gly	Ile	Leu	Phe	Gly	Gly	Glu	Ser	Val
		15					20				
Glu	Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn	Asn	Thr	Arg
25					30					35	
Lys	Ser	Ile	Arg	Ile	Gly	Pro	Gly	Gln	Ala	Phe	Tyr
			40					45			
Ala	Thr	Gly	Asp								
			50								

(2) INFORMATION FOR SEQ ID NO:149:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 52 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:149:

Ile	Ser	Ile	Thr	Glu	Ile	Arg	Thr	Val	Ile	Val	Thr
1				5				10			
Arg	Ile	Glu	Thr	Ile	Leu	Phe	Gly	Gly	Glu	Ser	Val
		15					20				
Glu	Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn	Asn	Thr	Arg
25					30					35	
Lys	Ser	Ile	Arg	Ile	Gly	Pro	Gly	Gln	Ala	Phe	Tyr
			40					45			
Ala	Thr	Gly	Asp								
			50								

(2) INFORMATION FOR SEQ ID NO:150:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 20
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:150:

```
Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr
1           5           10
Arg Leu Glu Thr Val Leu Phe Xaa Glu Ser Val Glu
          15           20
Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys
25           30           35
Ser Ile Arg Ile Gly Pro Gly Gln Ala Phe Tyr Ala
          40           45
Thr Gly
          50
```

(2) INFORMATION FOR SEQ ID NO:151:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified site
- (B) LOCATION: 20
- (C) OTHER INFORMATION: /note= "(-N)Lys"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:151:

```
Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
1           5           10
Arg Ile Glu Thr Val Ile Phe Xaa Glu Ser Val Glu
          15           20
Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys
25           30           35
Ser Ile Arg Ile Gly Pro Gly Gln Ala Phe Tyr Ala
          40           45
Thr Gly
          50
```